REMARKS

Claims 1-5 and 7-16 are pending in this application.

By this Amendment, the specification, claims and Figures are amended. Specifically, Figures 6, 12, 14 and 16-19 are amended to overcome the objections made by the Patent Office. Annotated marked-up drawings are attached hereto. Formal drawings, including the changes to the drawings, will be subsequently filed. Claims 1, 3, 7, 8, 10 and 11 are amended to cure informalities and to more fully distinguish the invention of the claims over the teachings of the prior art references cited against these claims. Claim 6 is canceled and claims 15 and 16 are added.

No new matter is added by this Amendment. Support for the amendments to claims 1, 3, 7, 8, 10 and 11 and new claims 15 and 16 is found in the original specification and claims. In particular, support for the language added to claim 1 is found in original claim 6. Support for new claims 15 and 16 is found in original claims 2 and 5, respectively.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Culbreth in the February 6, 2004 interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

I. Drawings

Figs. 17-19 were objected to as not having an appropriate legend because allegedly only that which is old is illustrated. As indicated at page 1, line 27 and at page 2, line 10, Figs. 17-19 each illustrate an all-terrain vehicle provided with the transmission disclosed in a latter publication, thus each of Figs. 17-19 is herein amended to included the terms "Related Art" in the legend. Applicants submit the requirements of the Patent Office have been met.

The drawings were also objected to for a number of informalities. In particular, the Office Action alleged (a) one page 1, line 36, reference numeral "30" should be "302"; (b) on page 12, line 16, "30 and 30" should be "30 and 32"; (c) contrary to page 14, Fig. 6 parts 50

and 51 do not engage parts 55 and 56; (d) reference numeral 62 at page 14, line 22 is not on the drawings and it appears that reference numeral "6a" in the drawing should be "62"; (e) reference numeral 112 is not in the drawings and apparently reference number "112" on page 20 of the specification should be "118"; (f) on page 21, line 3, reference numeral "112" should be "119"; (g) reference numerals having lead lines in the drawings should not be underlined; (h) contrary to page 12, line 19, reference numeral 126 does not refer to a pulley in Figure 13; (i) contrary to page 23, line 36, V-V is not in the drawings; (j) contrary to page 23, line 26, reference numeral 162 is not a shaft in Fig. 14 (the lead line is not correct); (k) reference numeral "199" at page 27, line 10 and throughout the remainder of the specification appears twice in Fig. 16 and refers to two different parts of the invention; and (l) reference numeral "200" at page 27, line 13 appears twice in the Figures and refers to two different parts of the invention.

In response to the objections to the drawings, Applicants herein (a) amend the specification such that reference numeral "30" on page 1, line 36 is replaced with "302"; (b) amend the specification such that "30 and 30" on page 12, line 16, is replaced with "30 and 32"; (c) submit that (as disclosed at page 10, lines 24-25 of the specification) Fig. 6 is a sectional development of a gear transmission mechanism on a plane including the center axes of shafts wherein the position of the shafts 31, 41, 42, 43 and the gears mounted thereon are intentionally displaced from their actual positions to clearly illustrate the shaft and gears; thus, as disclosed at page 14, Fig. 6 parts 50 and 51 engage parts 55 and 56; (d) amend reference numeral "6a" in Fig. 6 to "62"; (e) amend reference number "112" at page 20 of the specification to "118"; (f) amend reference numeral "112" at page 21, line 3, to "119"; (g) amend Figs. 12 and 14 to remove the underlines under reference numerals "103" and "113"; (h) reference numeral 126 does not appear at page 12, line 19; (i) amend "V-V" at page 23, line 36 of the specification to "XIV-XIV"; (j) amend the lead line of reference numeral 162 in

Fig. 14 to reference the shaft; (k) amend the specification at page 31, lines 4-7 and Fig. 16 to remove "199" and replace with "199' "; and (l) amend the specification at page 31, line 11 and Fig. 16 to remove "200" and replace with "200' ".

Applicants submit that the drawings, as amended in conjunction with the specification, meet the requirements of the Patent Office. Reconsideration and withdrawal of the objections are thus respectfully requested.

II. Specification

The disclosure was objected to due to a number of informalities. In particular, the Patent Office alleged (a) "detectors" should be "detector" at page 3, line 25; (b) "are" should be "is" at page 3, line 26; (c) "rod of single" at page 9, line 33 is not clear; (d) "the" should be "The" at page 20, line 37; and (e) "show" should be "shown" at page 21, line 6.

To this end, Applicants herein amend the specification such that "the shifting rod of single" at page 9, line 33 is amended to read "a single shifting rod". Applicants further amend the specification as suggested by the Examiner. Thus, Applicants submit the requirements of the Patent Office have been met.

III. Claim Rejections Under 35 U.S.C. §112, second paragraph

Claims 7-14 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Patent Office alleges that in claim 7, line 4 and in claim 11, line 6, it is not clear what part of the invention is the shifting sleeve.

To this end, Applicants herein remove the recitations relating to the shifting sleeve in claims 7 and 11. Applicants submit that this rejection is now moot. Reconsideration and withdrawal of the rejection are thus respectfully requested.

IV. Claim Rejecti ns Under 35 U.S.C. §103(a)

A. The '425 Patent in view of the '131 Patent

Claims 1, 3 and 6 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Japanese Patent 11-190425 (hereinafter the " '425 patent") in view of Japanese Patent 8-337131 (hereinafter the " '131 patent"). This rejection is respectfully traversed.

The '425 patent discloses a transmission including a belt-type variable-speed drive 2 and a gear transmission mechanism 1. See Fig. 1. The gear transmission mechanism 1 is configured to be selectively shifted to one of forward high-speed ratio, forward low-speed ratio, reverse, and neutral by a pair of shifting forks 8, 9. Referring to Fig. 4(b), a shifting lever S is disposed below a handle H at the right side of a fuel tank so as to protrude upward. A single lever shaft 13, which acts as an operating shaft of the gear transmission mechanism 1, is disposed on an end part of the engine at a central position in the width direction of the transmission so as to protrude upward. See Fig. 2. As shown in Fig. 3, a change plate 12 having cam guides 14a, 14b is connected to the lever shaft 13. A pair of shifting forks 8, 9 which engage the cam guides 14a, 14b of the change plate 12, are respectively moved in an axial direction by rotating the single lever shaft 13 so as to shift to one of forward high-speed ratio, forward low-speed ratio, reverse, and neutral. Since the transmission disclosed by the '425 patent has this configuration, the lever shaft 13 is inevitably disposed at the central position in the width direction of the transmission.

Referring to Figs. 3 and 4 of the '425 patent, the shifting level S, which is disposed at the right side of the fuel tank, is configured to rotate about a vertical axis, and the shifting lever S and the lever shaft 12 are connected via a straight tie rod R which is obliquely disposed with respect to the longitudinal axis of the vehicle extending in the back-and-forth direction.

In the present invention, a single change lever shaft (21), which is connected with a single shifting fork (60), is disposed at an end part in the right-and-left direction of a rear end part of an engine. This configuration is possible because the present invention has a single shifting fork (60). In other words, this configuration is not possible in the transmission of the '425 patent, because the '425 patent requires two shifting forks 8, 9. Moreover, in the present invention, the change lever shaft (21) and a shifting lever (15), which are disposed at a position below a right or left end part of a handle bar, are connected via a connecting member including a substantially straight single connecting rod (20) extending in the back-and-forth direction at the right or left side with respect to the engine.

The benefits of the configuration disclosed in the present invention include that a simple and compact transmitting mechanism can be provided for transmitting a shifting motion of a shifting lever to a shifting fork in a transmission for an all-terrain vehicle. Benefits of the configuration of the present invention also include a transmission having an improved operability for an all-terrain vehicle in which a back-and-forth movement of a shifting lever is very smooth. The '425 patent does not disclose or suggest such a configuration.

In particular, the '425 patent fails to teach or suggest (1) a single shifting fork for selecting at least a forward high-speed ratio, a forward low-speed ratio, neutral and reverse, (2) a single change lever shaft connected with the shifting fork, the change lever shaft being disposed on the same side as the side on which the shifting lever is disposed with respect to a longitudinal center axis of the all-terrain vehicle, and (3) a single connecting member connecting the change lever shaft and the shifting lever, the connecting member including a substantially straight single connecting rod extending in a back-and-forth direction at a right or left side with respect to the engine, as recited in claim 1.

Further, nothing in the '131 patent remedies the deficiencies of the '425 patent. More specifically, the '131 patent discloses a changing apparatus 2 including a first lever mechanism 24 and a second lever mechanism 25. The first lever mechanism 24 is for selecting forward, neutral and backward travel modes. The second lever mechanism 25 is for shifting standard (low) speed and high speed in the forward travel mode. The first and second lever mechanism 24, 25 can be operated by a single shifting lever. In this changing apparatus 2 of the '131 patent, the shifting lever is moved along a guide slot 43 which is formed in a lever cover 22a in a shape of a letter "h" turned on its side (i.e., turned by 90 degrees) so as to shift by operating the first and second lever mechanism 24, 25. The changing apparatus 2 of the '131 patent comprises a pair of tie rods connected with the first and second lever mechanism 24, 25, respectively.

Nowhere does the '131 patent teach or suggest (1) a single shifting fork, (2) a single change lever shaft connected with the shifting fork, and (3) a single connecting member connecting the change lever shaft and the shifting lever, as recited in claim 1.

Further, with respect to claim 3, the Patent Office alleges, "the plate 22a in Figure 2 of the '131 patent is on the same side of the engine as parts 35a, 27a for retaining the gear." However, the parts 35a, 27a are not equivalent to the retaining part which is recited in claim 3. Actually, the parts 35a, 27a are connecting parts with tie rods.

Accordingly, Applicants respectfully submit that the '425 patent and the '131 patent, whether taken alone or in combination, would not have led one of ordinary skill in the art to the invention of claim 1 or either of depending claims 3 and 6. Reconsideration and withdrawal of this rejection are thus respectfully requested.

B. The '425 Patent in view of the '131 Patent and the '079 Patent

Claim 4 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the '425 patent in view of the '131 patent and further in view of Japanese Patent No. 2-203079 (hereinafter the " '079 patent"). This rejection is respectfully traversed.

Claim 4 depends from claim 3, which in turn depends from claim 1, and adds that an intermediate stopper for temporarily holding the shifting lever in a neutral state is formed in a section of the guide slot between the retaining part for the forward high-speed ratio and the retaining part for the forward low-speed ratio.

Even if one of ordinary skill in the art would have found the '079 patent to teach or suggest the subject matter of claim 4, the presently claimed invention still would not have been achieved. Specifically, nothing in the '079 patent cures the deficiencies of the '425 patent and the '131 patent as discussed above. That is, nothing in the combined teachings of the '079 patent, the '425 patent and the '131 patent would have led one of ordinary skill in the art to the invention of claims 1 or 3.

Accordingly, Applicants respectfully submit that the '079 patent, the '425 patent and the '131 patent, whether taken alone or in combination, would not have led one of ordinary skill in the art to the invention of claim 1 or either of depending claims 3 and 4. Reconsideration and withdrawal of this rejection are thus respectfully requested.

V. Allowable Subject Matter

Applicants note with appreciation that claims 2 and 5 were objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. To this end, Applicants herein add new claim 15 incorporating the subject matter of original claim 2 with original claim 1, and add new claim 16 incorporating the subject matter of original claims 5

and 3 with original claim 1. Applicants submit, as acknowledged by the Patent Office, that claims 15 and 16 are in condition for allowance.

Applicants further appreciate that the Examiner has indicated that claims 7 and 11 would be allowable if the rejection under 35 U.S.C. §112, second paragraph, is overcome. Because the rejection is overcome for the reasons described above, claim 7 and 11 are in condition for allowance.

Finally, Applicants note with appreciation the indication that claims 8-10 and 12-14 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and to overcome the rejections under 35 U.S.C. §112, second paragraph.

VI. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-5 and 7-16 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:JSA:LMS/hs

Attachment:
Replacement Sheets

Date: February 6, 2004

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